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Implementing 'Best Management Practices' for Residuals: The Waste Exchange

Environmental Protection Agency, Washington, D C

Jun 76

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This document presents an overview of a mechanism which can be used to facilitate the exchange of wastes from a generator to a user and its possible role in state and areawide residuals planning efforts.

The premise is that many wastes contain valuable materials, some of which are in short supply. Extraction of materials from these wastes makes sense from both the conservational and the environmental points of view. The waste exchange is a system which is universally beneficial. First, industry can dispose of its unwanted wastes and perhaps receive a monetary bonus either through the sale of its wastes or by reducing waste magnitudes and as a consequence, costs of disposal. Second, the waste receiver, as a consequence of accepting the generator's waste can potentially reduce costs for materials. Finally, the environment is saved from the introduction of potential pollutants from land and water disposal methods.

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Reclamation
Residues
Exchanging: Material separation

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Residual wastes

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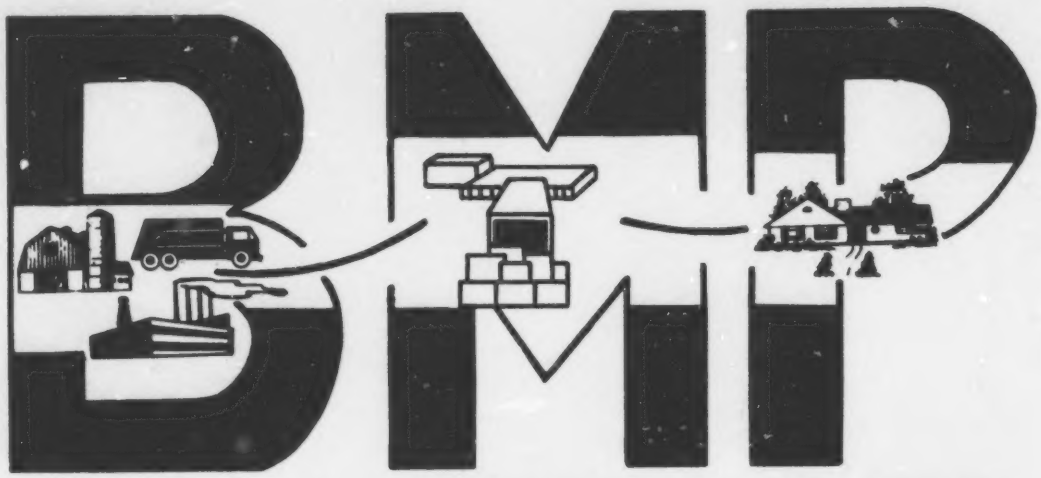
JUNE 1976

IMPLEMENTING A BMP



BEST MANAGEMENT PRACTICES

FOR RESIDUALS: THE WASTE EXCHANGE

U.S. ENVIRONMENTAL PROTECTION AGENCY
Water Planning Division
and
Hazardous Waste Management Division
Washington, D.C. 20460

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IMPLEMENTING "BEST MANAGEMENT PRACTICES" FOR RESIDUALS: THE WASTE EXCHANGE

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September 1976

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IMPLEMENTING "BEST MANAGEMENT PRACTICES" FOR RESIDUALS: THE WASTE EXCHANGE

Introduction

The "Federal Water Pollution Control Act Amendments of 1972" (The Act) delineate water quality goals which are to be met by 1983 and 1985. The Act calls for the formation of State and Areawide Planning Agencies to "encourage and facilitate the development and implementation of areawide waste treatment management plans." These plans are to present an integrated comprehensive system for managing water quality problems.

The Act calls for planners to develop techniques to control the disposition of all residual wastes generated within the planners's jurisdiction which could affect water quality and to control the disposal of pollutants on land or in subsurface excavations to protect groundwater and surface water quality [Section 208(b)(2)(J) and (b)(2)(K)]. Residual wastes are defined as those solid, liquid, or sludge substances resulting from man's activities in the urban, agricultural, industrial, and mining environment and are not discharged directly to water after collection and treatment, if any. Residual wastes include municipal solid waste, industrial wastes and sludges, hazardous wastes, and sewage sludges.

The U.S. Environmental Protection Agency (EPA) encourages planners to develop a sound, results orientated program of conceptualization, investigation, analysis and evaluation, planning and programming, and (most importantly) the excercise of capable leadership and strong resolve to implement State and areawide programs and systems. The term Best Management Practices (BMP) originated as an outgrowth of this concept and means a practice, or combination of practices, that is determined to be the most effective, practicable (including technological, economic, and institutional considerations)

means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals. State (or designated areawide) planning agencies can only make this determination after assessing the problem, examining alternative practices, and soliciting appropriate public participation. A BMP does not necessarily imply a single approach; rather, a BMP for residuals may be a combination of techniques and practices which must be integrated into an overall effective residual waste management system for a given area. Inherent in the notion of BMP are programs which are practical, useful, and low in cost.

There are three concepts which planners should consider as they develop a BMP for residuals management:

- Waste reduction
- Resource conservation
- Environmentally safe disposal.

The "waste exchange" is a mechanism which will help local jurisdictions and industry to deal with industrial wastes and residuals through resource conservation and utilization. The premise is that many wastes contain valuable materials, some of which are in short supply. Extraction of materials from these wastes makes sense from both the conservation and the environmental points of view. Waste recycling and utilization is especially effective when the wastes can be transferred from the generator to the user "as is," thereby reducing the need for costly treatment processes and the incidence of potentially harmful disposal practices. The waste exchange assists industry to identify industrial wastes which may be useful raw materials.

The waste exchange is a system which is universally beneficial. First, industry can dispose of its unwanted wastes and perhaps receive a monetary bonus either through the sale of its wastes or by reducing waste magnitudes and as a consequence, costs of disposal. Second, the waste user can potentially reduce costs for raw materials. Finally, the environment is saved from the introduction of potential pollutants resulting from land and water disposal methods.

Characteristics of Waste Exchange Systems

Two characteristics appear to be of dominant importance when describing waste exchange systems. The first distinction is between those systems which limit themselves to transferring information and referring potential offerors and acceptors to each other, and those systems which also physically handle the wastes. This distinction between information and materials-handling (which can include information services) is important because the latter requires more staff skills, larger facilities and thus more investment capital.

The second distinction relates to a waste exchange's approach to or strategy for conducting its business. Under a passive strategy, the industrial waste exchange does not seek out potential waste users, but waits for waste users to provide input to the system. The passive industrial waste exchange plays no role in negotiations between waste sources and potential waste users. By contrast, under an active strategy, the waste exchange both identifies a potential match and assists in consummating a contract between the waste generator and the waste user. Active systems perform technical functions (i.e., analysis, recognizing or creating users, processing into more salable form, etc.) and business functions (i.e., arranging transportation, financing, etc.). This distinction between passive and active strategies is important not only because the latter implies greater costs and risks, but also because the active strategy may be more effective in reducing the amount of industrial wastes ultimately disposed into the environment.

These two distinctions can be combined to produce four variations:

- Information/Passive
- Information/Active
- Information and Materials-handling/Passive
- Information and Materials-handling/Active

Table 1 shows some design specifications of these four possibilities.

To further elaborate on specific design characteristics, Table 2 shows the spectrum of possibilities for each of sixteen general characteristics. Most of the characteristics

TABLE 1

INITIAL DESIGN SPECIFICATIONS FOR INDUSTRIAL WASTE EXCHANGES

I. Information/Referral Only	II. Both Information and Materials Handling Services
A. Minimum Needs for Passive Strategy	
° Maintain confidentiality	° Maintain confidentiality
° Credibility among users	° Credibility
° 1 part-time manager with 1 part-time secretary	° Storage & handling capacity
° Small financial support	° Chemical analysis capability
	° Manager, secretary, chemists, and handlers (according to volume)
	° Modest financial support (depending on volume and revenue)
B. Additional Needs for Active Strategy	
° Intimate knowledge of user industries and processes	° Stable volume of exchange activity
° Location in industrial region	° Intimate current knowledge of user industries & processes
° Additional staff	° Chemical treatment capability
° Technical imagination	° Provide general consulting services
° Entrepreneurial vigor	° Additional financial backing
	° Additional technical and market personnel
	° Technical imagination
	° Entrepreneurial vigor

are self-explanatory, but a few deserve further comment. Wastes accepted (Element 6) is critical to a system's technical and economic success; whereas a private business must limit itself to shrewdly selecting wastes with greater potential for use in order to realize a profit, a non-profit system, perhaps less constrained by short-term profit goals may accept marginal residues which are less immediately attractive in expectation of holding them until buyers or acceptors appear.

Volume of activity (Element 7) is likely to vary, and the variations will strongly influence whether a system can become and remain viable. The experience of the European systems suggests that a new industrial waste exchange will receive many listings for a while, including some large-volume wastes. However, as the existing backlog of supplies is cleared, and after offerors and buyers of regular waste streams are linked and continue their relations without the system's further intercession, the system's activity may both diminish in number and change in character to irregular offerings (e.g., wastes resulting form accidents or occasional below-standard production runs). Potential volume influences system design because, while an association or government-sponsored system might use a part-time staff on a demand-only basis, a private firm would require a threshold volume to cover costs or have to operate the exchange as a "loss leader" to attract new business or a service ancillary to other profitable enterprises.

"Private individual", "informal network", "informal subsidies" (Elements 8, 9, and 17) are included to recognize that the establishment of a new industrial waste exchange probably institutionalizes an existing pattern of matching conducted informally by individual engineers or plant managers, perhaps supported by minor subsidies of telephone costs and storage space from their employers.

The financial elements (Elements 16, 17, and 18) suggest that a system's financial basis may be mixed. It might start with subsidies, but shift, after establishing its value to customers, to a profit or surplus-making mode. Or it might initially sell only to buyers, but be able, as disposal costs rise, to charge fees also to waste generators.

Whereas Table 2 summarizes characteristics internal or inherent to a waste management information system, Table 3 presents important features of its external environment. Elements 7 and 8 highlight the important role of the

TABLE 2

INTERNAL CHARACTERISTICS OF WASTE EXCHANGE ORGANIZATIONS

Element	Spectrum
1. Services Offered	Information and Referral Only: by Magazine Ads; by special Clearinghouse — Materials: only handling and transport; Analysis, reprocessing & transport
2. Service Role or Strategy	Passive — Active
3. Geographic Radius Served Normally	25 mi. — 50 mi. — 75 mi. — 100 mi. — 1,000 mi. — 2,000 mi.
4. Industry Coverage Offered	1 sector of an industry — 1 industry — Related industries — Many industries
5. Type of Clients Sought	Small, local firms; weak technical skills — Medium, Regional moderate skills — Large, national firms; strong technical skills
6. Number and Value Reusable Wastes Accepted	Few, most valuable only — Many, even of Marginal Value
7. Volume of Activity	Small, episodic, unpredictable — Moderate, variable — Large, continual, regular
8 Legal Status	Private Sector: Private Individual; Non-Profit Institution; Private Firm — Public Utility: Private Firm with Government Franchise; Special-Purpose Government Corporation; Government Line Agency
9. Private-Sector Organizational Forms	Private Individual; Informal Network; Trade Association; Independent, Small, single company; Subsidiary of large multi-purpose company
10. Public-Sector Sponsors	Single local Government; Several local Governments; State Agency; Multistate Authority; Federal Agency; International Federation

TABLE 2 (Continued)

11.	Skills of Staff	Limited (managerial and clerical)		Moderate		Extensive (chemical analysis, processing, marketing)
12.	Technical Experience and Imagination of Staff	Limited		Moderate		Extensive
13.	Size of Professional Staff	1 part-time manager, few volunteer advisors		1-3 full-time		3-6 full-time
14.	Data Bank	Blackboard Simple card files	Files, library, staff experience, & contacts: Limited	Moderate	Extensive	Large, Computerized, Matching & retrieval system
15.	Advertising	Informal word-of-mouth	Via magazine & journals	Special lists	Occasional marketing	Vigorous marketing
16.	Pricing Policy	Free		At cost		At profit
17.	Financial Policy	Subsidized informally	Subsidized formally	Subsidizes & revenues	Break even on revenues	Profit or surplus
18.	Income Sources	Individual subsidies	Informal subsidies	Formal subsidies	Client Fees (Waste Users)	Client Fees (Waste Generator)	Public subsidies: Partial	Full
19.	Risk Level Acceptable	None	Small	Medium		Large
20.	Style of Management	Reactive		Mixed		Aggressive
21.	Capital Requirements	$25,000		$250,000		$400,000+
22.	Annual Operating Budget (all costs accounted)	$10,000				$100,000+

TABLE 3

EXTERNAL CONDITIONS INFLUENCING WASTE EXCHANGE ORGANIZATIONS

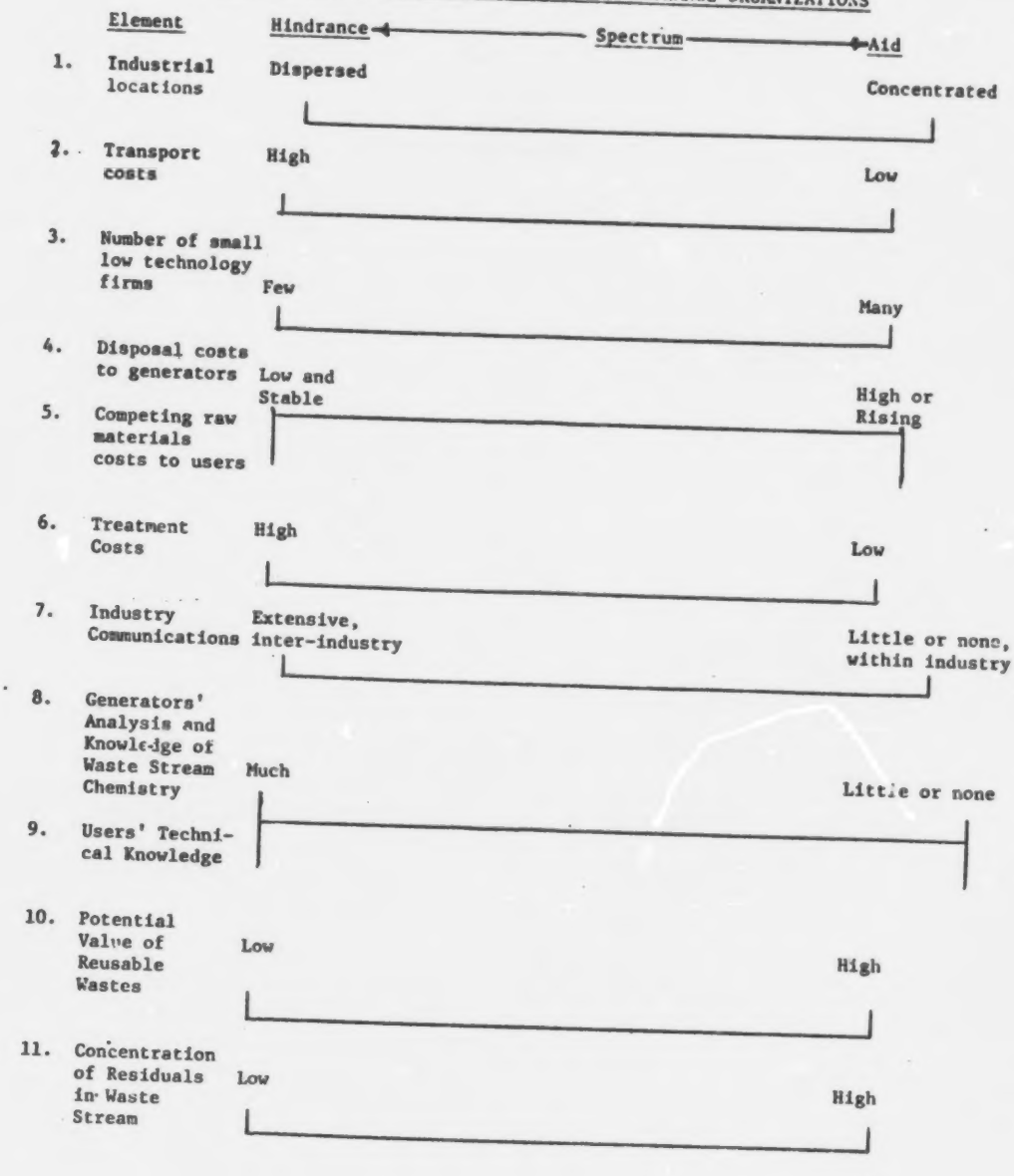


TABLE 3 (Continued)

12.	Regularity of Streams (combined total)	Episodic				Sustained, continuous
13.	Quantity of Wastes Available for Transfer	Small				Large
14.	Public Awareness of Environmental Dangers	Low				High
15.	Initiative Available to Create Transfer Organization	Individual, Voluntary	Informal, Group, Voluntary	Formal, Group, Voluntary	Spotty Regulation, Mandatory	Comprehensive Regulation, Mandatory
16.	Regulations Requiring Reuse or Safe Disposal	Few or none, limited scope				Many Comprehensive
17.	Financial Incentives, Subsidies, or Capital	Unavailable				Available
18.	Legal Liability	Unclear, unlimited				Clearly defined and limited

system's technical personnel in recognizing or treating reuse possibilities unknown by offerors. The last four elements (Elements 11, 12, 13, and 14) are closely related to the system's size, complexity, and stage of development.

Of the four institutional variations which have been identified, the Information and Materials-handling/Passive type appears to hold little promise. It is unlikely that any institution could afford to accept and hold wastes awaiting the appearance of a potential user.

The most widely known and discussed type of waste exchange is the Information/Passive type. There are a number of examples of this type in both Europe and the United States. Appendix A provides a brief description of the European clearinghouses and Appendix B provides a brief description of two clearinghouses in the United States. It should be noted that these waste exchanges are generally operated by organizations which have close ties to industry (i.e., industry trade associations), they are subsidized by the sponsoring organizations with personnel and materials, and they are able to handle information without revealing the source until the source wishes to be known.

There are a few examples of the Information/Active waste exchanges. The Information/Active type of service is usually offered by a broker or consultant who identifies waste sources, consolidates waste lots, and resells the wastes to users. The broker may even arrange for transportation and reprocessing, but never actually invests capital in waste handling equipment.

The Information and Materials-handling/Active type of waste exchange is operated in a similar manner to the Information/Active exchange, except that the operator makes a capital investment in some waste handling equipment (i.e., trucks, storage tanks, etc.) and reprocessing facilities (i.e., evaporators, distillation equipment, chemical reactors, etc.).

The Role of State and Areawide Planning Agencies

Waste exchanges provide industry with a means to identify alternative uses for their process and pollution control residuals. The best way to begin a waste exchange is by susidizing the Information/Passive type of organ-

ization (or more precisely, a waste information clearinghouse). Table 4 shows the portion of each element from Table 2 which would appear to be applicable to the Information/Passive type of organization. As part of their residuals management planning, State and Areawide Planning Agencies can determine the usefulness of a waste exchange within their jurisdictions. If they determine that a waste exchange is warranted, planning agencies can act as a catalyst to establish a waste exchange. It is not likely that a waste exchange which is sponsored and operated by State and/or Areawide Planning Agencies would be well received by industry. Industry would be suspect of possible government regulation and of potential public disclosure of information which it might consider confidential. Therefore, planning agencies should limit themselves to assisting other organizations with the development of a viable waste exchange system.

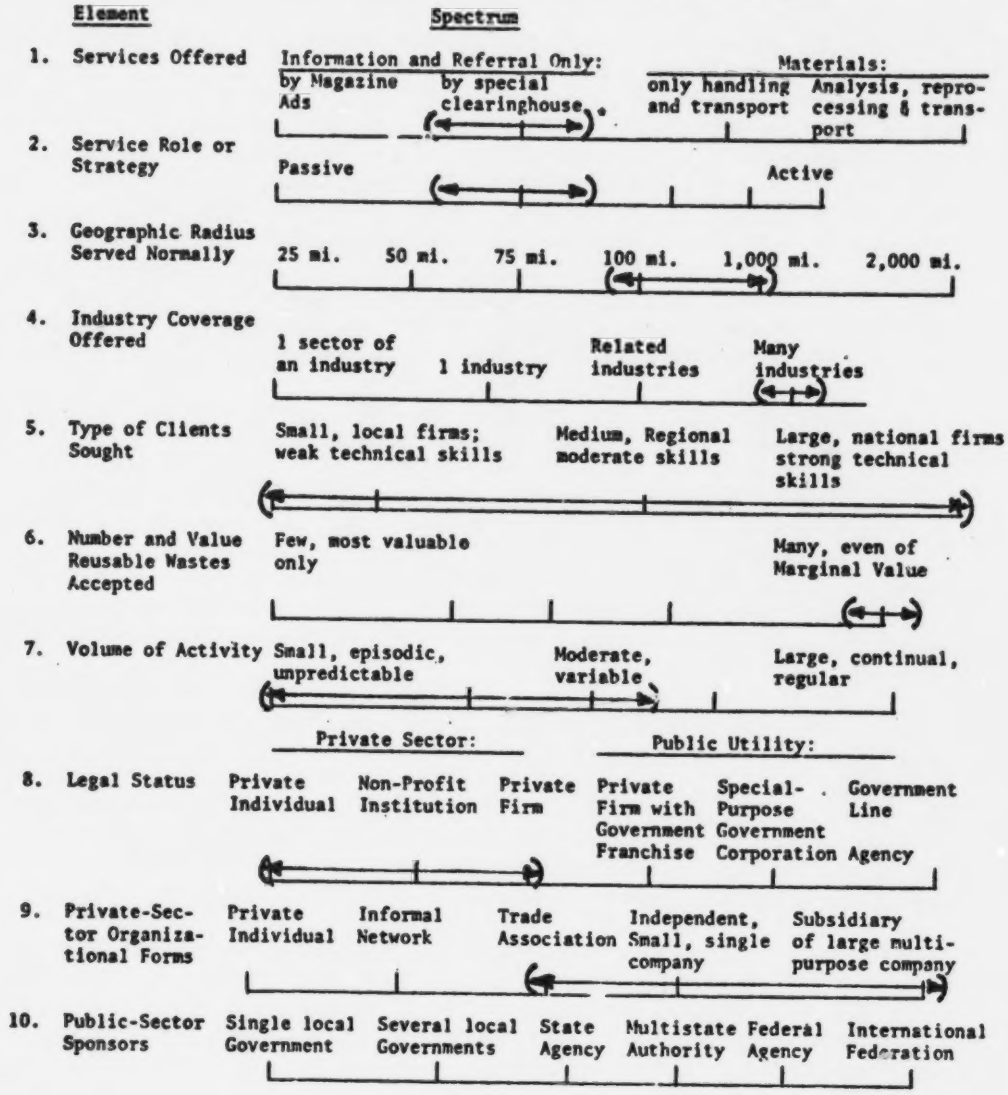
In their role as catalyst, State and Areawide Planning Agencies may wish to provide educational services. As an example, planning agencies can sponsor meetings with industry representatives to discuss the waste exchange concept and provide information to the media (i.e., newpapers, regional journals, professional publications, newsletters, etc.) to explain and encourage the establishment of waste exchange systems. Planning agencies also have the means to identify potential industry participants to help develop and use the system.

Even though State and Areawide Planning Agencies should not have direct access to waste exchange data, agency staff can assist in the development and operation of a waste exchange by participating on a waste exchange advisory committtee. The purpose of the advisory committee would be to establish policy for the waste exchange and to evaluate its effectiveness in transferring wastes to potential users.

The importance of a waste exchange in residuals management should not be overemphasized. Utilization of industrial wastes is a viable concept for a number of waste streams, but only a small number (and volume) of wastes can be expected to be handled in this mannner.

TABLE 4

SUGGESTED INTERNAL CHARACTERISTICS OF A WASTE EXCHANGE ORGANIZATION



* Brackets indicate the range on the spectrum which would represent the characteristics for a Information/Passive waste exchange.

TABLE 4 (Continued)

11.	Skills of Staff	Limited (managerial and clerical)	Moderate	Extensive (chemical analysis, processing, marketing)
12.	Technical Experience and Imagination of Staff	Limited	Moderate	Extensive
13.	Size of Professional Staff	1 part-time manager, few volunteer advisors	1-3 full-time	3-6 full-time
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19.	Risk Level Acceptable	None	Small / Medium	Large
20.	Style of Management	Reactive	Mixed	Aggressive
21.	Capital Requirements	$25,000	$250,000	$400,000+
22.	Annual Operating Budget (all costs accounted)	$10,000		$100,000+

Additional Information

A soon to be completed study commissioned by EPA's Office of Solid waste Management Programs, entitled Waste Clearinghouses and Exchanges: New Ways for Identifying and Transferring Reusable Wastes, will expand upon the concepts presented here and offer additional information about waste exchange operations.

Appendix A: European Clearinghouses

During the past four years, waste exchange clearinghouses have been established in ten European countries to promote the utilization of industrial wastes.

The first waste exchange in Europe was set up in the Netherlands by the Association of Dutch Chemical Industries (VNCI) early in 1972. The Belgian Chemical Industry Association (FICB soon followed suit. West Germany's Chemical Industry Association (VCI) set up its "Abfallborse" in December 1972, and Austria soon joined it. In Germany, a number of exchanges have also been established by local chambers of commerce, in cooperation with VCI. In March 1973, the Swiss Society for the Chemical Industry, the Association of Swiss Paint and Varnish Manufacturers, and Switzerland's Union of Soap and Detergent Manufacturers jointly set up a waste exchange for their members. The Federations of Industry in the four Scandanavian countries (Denmark, Norway, Sweden, and Finland) jointly established the Nordic Waste Exchange in November 1973. In the United Kingdom, a government-run waste exchange has been operating since November 1974.

In most cases, the initative for establishing a waste exchange clearinghouse came form the national chemical industry trade association, and all but two of the exchanges are financed wholly by the industry. In Scandinavia, a Nordic intergovernmental foundation (Nordisk Industrifond) was formed at the recommendation of an official Nordic working group on waste management, to cover the costs of operating a clearinghouse for a three year period. Matching funds are provided by each country's Federation of Industry. In the United Kingdom, a committee of chemical manufacturers recommended the establishment of a waste exchange clearinghouse to the Department of Enviroment and the Department of Trade and Industry. The clearinghouse is now sponsored by the latter.

These European waste exchange clearinghouses all began with a very low budget, with no clear idea of what might happen, but with a belief that waste utilization made sense. Most of the exchanges appear to be integrated into the operations of the chemical industry associations, which run them with a staff of one administrator supervised by one or two part-time senior staff. The latter are usually engineers or chemists. The cost is kept to a minimum by using existing resources (offices, staff, etc.)

and existing communications vehicles (trade journals, association bulletins, etc.). Except in Scandinavia and the United Kingdom, the role of government agencies is apparently nonexistent.

The basic service provided by the clearinghouses is simple and inexpensive. The administering organizations receive offers of, and requests for, waste material. They circulate them anonymously to potentially interested parties. Offers and requests are often listed in the industry association journal. Parties interested in purchasing any material offered write to the clearinghouse, and their inquiries are forwarded to the firm which placed the offer. The firm contacts respondents for further negotiations if it wishes to do so. The clearinghouse services are provided to participants free of charge, except for the subscription fee which sometimes charged for the publication in which offers and requests are listed.

The waste exchange clearinghouse in the United Kingdom is unique among the exchanges in Europe in that it is exclusively government sponsored. The U.K. Waste Materials Exchange is operated by the Warren Spring Laboratory at Stevenage and is funded by the Department of Trade and Industry. The clearinghouse is run by three people, one full-time secretary, one half-time secretary and one third-time technical person. Of the 845 items which were listed as available in the U.K. Waste Material Exchange's first five quarterly bulletins, a total of 2,802 inquiries were received for 620 of them. This activity resulted in 62 transactions. There were also 635 offers to supply 120 of the 158 items which were listed as wasted. There have been no transactions reported involving the "wanted" materials, and the U.K. Waste Materials Exchange is reassessing the value of the "wanted section."

Appendix B: U.S. Clearinghouses

Two waste exchange clearinghouses have recently been established in the United States. Both clearinghouse operations are similar to those in Europe.

A volunteer task force, composed of government and industry representatives, emerged from a conference sponsored jointly by the St. Louis Regional Commerce and Growth Association (RCGA), the East-West Gateway Coordinating Council (the St. Louis area's Council of Governments and Areawide Planning Agency), and the Associated Industries of Missouri to study the potential for a waste exchange clearinghouse. The work of this group resulted in the establishment of the first U.S. waste exchange clearinghouse on October 30, 1975. RCGA, acting as the Secretariat for the St. Louis Industrial Waste Exchange, receives, codes, compiles, and publishes offers and requests from industry. All listings are confidential. Responses to listings are received and forwarded by RCGA to the firm which made the offer. The firm chooses the respondents with which it wishes to negotiate. The St. Louis Industrial Waste Exchange and RCGA do not participate in negotiations and do not assume any responsibility for the accuracy of descriptions.

The St. Louis Exchange published its first list of waste offerings in January 1976. The listing included 43 items which were available and 8 items which were wanted. Even though the St. Louis Exchange primarily serves the St. Louis metropolitan area (including several counties in Illinois), the first list carried offers and requests from the East Coast, the Upper Midwest, and the South. No wastes are known to have been transferred as a result of the St. Louis Exchange's efforts, however, this is not unexpected since negotiations often take several months.

The second clearinghouse to be established in the United States, the Iowa Industrial Waste Information Exchange, evolved from the cooperative efforts of Iowa State University's Center for Industrial Research and Service (CIRAS), the Iowa Department of Environmental Quality, the Iowa Development Commission, the Iowa Manufacturer's Association, and private firms. CIRAS is an extension service of Iowas State University which offers consulting services to Iowa industries. The Iowa Exchange was established at CIRAS to provide a formalized and orderly approach to handling a greater

volume and variety of requests for help with waste disposal problems from Iowa industry.

Like other waste clearinghouses, the Iowa Exchange receives, codes, compiles, and publishes lists of available and wasted waste materials. Sources of listings are confidential until the firm which placed the listing responds to an inquiry. Listings are carried for one year, free of charge to Iowa industry. Inquiries are forwarded to the firm which makes the offer or request. The Iowa Exchange does not participate in negotiations nor does it warrant character or contents of any items listed. The Iowa Exchange does not make recommendations with respect to legal requirements for storage, handling, transportation, or disposal of potentially hazardous substances. Firms offering materials are not required to disclose what means they now use, or have used in the past, to dispose of waste materials.

Appendix C includes the listing questionnaires, instructions, and examples of lists from the St. Louis Industrial Waste Exchange and the Iowa Industrial Waste Information Exchange.

Appendix C: Examples from U.S. Clearinghouses

Saint Louis Regional Commerce & Growth Association
Ten Broadway/Saint Louis, Missouri 63102/314 231-5555

ST. LOUIS INDUSTRIAL WASTE EXCHANGE

ST. LOUIS REGIONAL COMMERCE & GROWTH ASSOCIATION

10 Broadway

St. Louis, Missouri 63102

OPERATIONS AND PROCEDURES:

The Exchange will publish listings and make every effort to circulate them as widely as possible. Items listed will be published every quarter and will be carried for three consecutive quarters. The types of materials offered or sought should be those for which well-established markets do not exist.

The Exchange will make every effort to protect the identity of participating firms from competitors and government regulatory agencies. Each item listing which the Exchange receives will be assigned a confidential code number. Only the person managing the day-by-day activities of the Exchange will have access to the coding index relating listing numbers to the firms' names. Federal and State agencies dealing with hazardous waste have agreed to this procedure in the interest of increasing resource recovery and reducing the volume of industrial waste requiring disposal.

Responses to listings will be received by the Regional Commerce & Growth Association and will be promptly forwarded to the firm which made the listing. The firm chooses the responders, if any, with which it wishes to negotiate. The Exchange will not participate in negotiations. The firm's only obligation to the Exchange is to notify the Secretariat when a successful negotiation is completed.

LISTINGS:

The Exchange will publish two types of listings for which there will be a nominal fee of $5.00 per item listed. The fee is to be paid by the listing party and is intended to cover the Exchange's mailing and stationery costs.

The Type "A" listing is for items which are available and the Type"W" listing is for items which are desired. Each listing should include a description of the item, composition, quantity, packaging, and geographic origin.

Fees for the items listed should be paid in advance.

The Exchange will not be responsible for the contents of any item listed.

ADDITIONAL BACKGROUND:

The waste exchange concept, while non-existent in the U.S., is currently a successful operation in the Netherlands, Germany, Italy, Switzerland, Belgium, Britain, and the Scandinavian Countries. These waste "bourses" are institutions where companies can offer potentially salable waste products and where buyers can bid for them. Such inter-industry trading of waste materials is rare in the United States, and the St. Louis region is no exception. Moreover, adequate hazardous waste disposal facilities are lacking in the Missouri-Illinois area.

SAMPLE LISTINGS:

A 0001-75 Chrome (III) oxide, water content approx. 30%. Dry weight composition: Cr_2O_3, over 99%, carbon, trace; kieselguhr, trace.
Quantity: Approx. 7 tons/mo.
Location: St. Louis

W 0001-75 Aluminum chloride, as hexahydrate or as solution with at least 10% Al, without heavy metals.
Quantity: up to 30,000 tons/yr
Location: St. Louis area, if possible

LISTING FORM

ST. LOUIS INDUSTRIAL WASTE EXCHANGE

ST. LOUIS REGIONAL COMMERCE & GROWTH ASSOCIATION

10 Broadway

St. Louis, Missouri 63102
(314) 231-5555

Company Name: _____

Mailing Address: _____

_____

Company Contact: _____

Telephone Number: _____

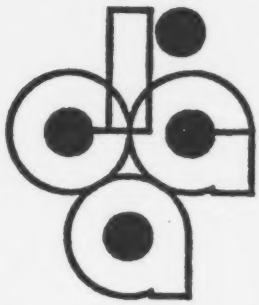
Company identities will be kept confidential

- - - -

LISTING 1-76

St. Louis Industrial Waste Exchar

operated by



Saint Louis Regional
Commerce & Growth
Association

Ten Broadway/Saint Louis, Missouri 63102/314 231-5555

There are two types of items that are listed herein, Items Available and Items Wanted. If there is an interest in any item, send a letter to:

Roland C. Marquart
St. Louis Regional Commerce
& Growth Association
10 Broadway
St. Louis, Missouri 63102

Please note the Code Identification in your response. Inquiries will be promptly forwarded to the firm which made the listing. Any future actions, including terms and conditions of a sales agreement, are left between the inquiring parties. The Exchange will not participate in the negotiations.

INFORMATION GIVEN HAS BEEN SUPPLIED BY THE OFFEROR; NEITHER THE REGIONAL COMMERCE & GROWTH ASSOCIATION, THE INDUSTRIAL WASTE EXCHANGE, NOR ANY MEMBER THEREOF MAKES ANY WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY OF DESCRIPTION, FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY OF ANY ITEM LISTED HEREIN.

Listings are scheduled to be published quarterly, in January, April, July, and October. For additional information, send a letter as indicated above, or call 314-231-5555, extension 41.

ITEMS AVAILABLE

Code Identification: A1-1

Item: Coated Abrasive Scrap-Mixed Pieces/Sizes, both Cloth and Paper Backings; Grit Range 16-400 Unsorted.
Availability: Ten Tons per Month, 350 Pound Bales.
Location: Mid-South.

Code Identification: A1-2

Item: Spent Nitric Acid Strip with Approximately 1¼ Pounds Copper Metal per Gallon Plus ¼ Pound Nickel Metal per Gallon.
Availability: 3,000 Gallons at this Time.
Location: Local.

Code Identification: A1-3

Item: Centrifuge Cake-10% Plus Moisture; Solids-Approximately 84% Sand, 14% Glass, 2% Iron. Average Particle Size 20 Microns.
Availability: 200 Tons per Week.
Location: Local.

Code Identification: A1-4

Item: Thermoplastic Resins, Reground; Various Types and Colors. Contaminated from 1% to 50%; Average Contamination 5% with Other Resins. Average Particle Size 3/16 Inch Diameter.
Availability: 50,000 Pounds per Month.
Location: Midwest.

Code Identification: A1-5

Item: Nitric, HF Acid Solution with Urea. 45% Nitric Acid, 15% Hydroflouric Acid, 8 Ounces Urea per Gallon. Also Contains Dissolved Titanium/Vanadium Metal.
Availability: 2,000 Gallons per Week.
Location: Local.

Code Identification: A1-6

Item: Ferric Chloride Solution. 30% to 45% Ferric Chloride, with Dissolved Iron, Nickel, Chromium, and Aluminum Metal.
Availability: 1,000 Gallons per Month.
Location: Local.

Code Identification: A1-7

Item: Chromic HF Solution .5% to 20% Chromic Acid, 5% to 15% Hydrofluoric Acid, with Dissolved Titanium Metal.
Availability: 3,000 Gallons per Month.
Location: Local.

Code Identification: A1-8

Item: Shotdust-Finely Divided Particles Smaller than a No.80 U.S.Standard Sieve. Composition-Ferrus Oxide 41.81, Ferric Oxide 31.88, Iron Ferrum 26.44, Iron Content 80.88%.
Availability: 10 Tons per Month.
Location: Local.

Code Identification: A1-9

Item: Sawdust (From Shaping Particle Board).
Availability: 100 55-Gallon Drums per Month.
Location: Local.

Code Identification: A1-10

Item: Scrap Nail Polish, 70% Solvent Mixture (N/Butyl Acetate, Toluene, Ethyl Acetate); 23% Nitrocellulose, Thixotropic Agent, and Pearl Essence Pigment; 7% Color Pigments.
Availability: Approximately 3,500 Gallons at this Time.
Location: Midwest.

Code Identification: A1-11

Item: "D.C.I.P.E." (Dichlorodiisoproplyether) By-Product Of Propylene Oxide. Production-5 Major Components are Propylene Dichloride, Dichloridiisoproplether, Methyl B-Ethylacrolein, 1, 2, 3-Trichloropropane, Trichloroiso Proplether.
Availability: 10-15,000 Gallons per Month.
Location: East Coast.

CIRAS Fact Sheet

Iowa Industrial Waste Information Exchange

Conducted by: Center for Industrial Research and Service (CIRAS)
Iowa State University—201 Building E
Ames, Iowa 50011

Background

Legislation, both state and federal, in recent years has brought into focus increasing problems for industrial firms in handling by-products and waste materials. Environmental considerations and regulations preclude many of the historical methods of disposal such as open burning or use of landfills for certain materials.

CIRAS, in its 12 years, has handled many projects relating to possible uses for wastes and has worked with individual firms to search out economical methods for use or disposal of them. These requests have been handled on a one-to-one basis and in many cases satisfactory solutions have been achieved. No special publicity has been given to this effort. However, the problems are increasing and the Iowa Industrial Waste Information Exchange has been established at CIRAS to provide a formalized and orderly approach to handling a greater volume and variety of requests for help from Iowa firms.

The waste exchange concept is currently showing success in several European countries, and the first exchange of this type in the United States is operating in the St. Louis, Missouri area. The chemical industry, in particular, has accomplished much in developing markets between individual firms in which the by-product from one plant has been utilized or reprocessed by other firms.

Salable wastes are already being handled satisfactorily in many cases, and nothing in this Exchange effort is intended to interfere in any way with these existing arrangements and agreements. The focus of this effort is on materials for which no satisfactory means of use or disposal have been found.

It is inevitable that questions about some waste materials will come to CIRAS, as they have in past years, for which no satisfactory answers are now available. Should these develop in a significant way, research activity beyond the scope of CIRAS staff time and capabilities may be needed, and could be conducted only if they were to be undertaken by the interested firm or groups of firms.

Operations and Procedures

The Exchange functions as a clearinghouse for information about types and quantities of industrial waste materials. It gathers and disseminates information about available materials and about materials wan... by Iowa manufacturers. The Exchange also has veloped a list of firms who are in the scrap and sal... business which is available upon request.

"Listings" of materials available or wanted solicited by the Exchange. The Exchange prov... special listing questionnaire form to interested fi... which they can make their wishes known. (See ... side.) These "listings" of materials available or by Iowa firms are handled on a confidenti... number basis so there is no public disclosure of the involved.

Names of firms interested in certain "listings" wi... forwarded promptly to the firm which placed the lis... It is the responsibility of the firm having the mate... to choose the inquirer, if any, with which it wishes negotiate. The firm's only obligation will be to notify ... Exchange when the problem is resolved.

The Exchange will not participate in negotiations n... will it knowingly list materials for the specific purp... of trying to develop a higher price for the owner of it.

The Exchange will not be held responsible for determination of the character or contents of any item listed nor for determination of what may constitute hazardous substance or create a hazardous conditi... The Exchange does not make recommendations w... respect to legal requirements for storage, handli... transportation, or disposal of what may be defined ... hazardous substances.

Firms offering listings of available materials are no... required to disclose what means they now use, or have used in the past, to dispose of waste materials unless they wish to do so.

Listings

The Exchange solicits and will publicize in the widest means available two types of listings:

1. "A"— For available materials.
2. "W"— For materials wanted by manufacturers.

Each listing will include a description (and/or analysis) of the material, its composition, quantity per week or month, packaging or available form, and general area of the state where the material exists or is wanted.

Listings are coded by consecutive number and date of first listing, such as A-001-1/76 or W-001-1/76. Listings will be carried for up to one year or until a successful solution has been achieved.

A listing form is on the reverse side. Only one item is to be listed on each form. Make additional copies for each available or wanted item.

LISTING FORM

Iowa Industrial Waste Information Exchange
c/o CIRAS, 201 Building E
Iowa State University
Ames, Iowa 50011 515/294-3420

_____ (Code Number)

_____ (Date)

Check One: This is a listing for _____Material available

_____Material wanted

Please list the following through Iowa Industrial Waste Information Exchange: (Type or print information)

Material: (Describe as fully as possible as to content and/or analysis)

Quantity: (Amount per period of time, i.e. gal./week or lb./month, etc.)

Packaging: (Barrels, loose, bales, etc.)

Where available or wanted:

The following 3 points are optional. Your answers will help the Exchange provide better service.

1. Is this material now being disposed of or obtained satisfactorily? _____ Yes _____ No.
   If Yes, please list here any firms which are providing disposal or supply services.

2. Please state your primary reason for asking the Exchange to make this listing for your firm.

3. Comments: (Use additional pages, if needed.)

PLEASE READ BEFORE SIGNING

In submitting this listing it is understood that the Exchange and CIRAS will not disclose our firm's identity. We also recognize that determining the nature and content of the subject material and the description or representation of it is our company's sole responsibility. CIRAS and the Exchange will not be involved in negotiations between our firm and potential customers or suppliers and will not make any determinations as to prices of materials or what may constitute hazardous substances or conditions.

Your Name _____ Title _____

Signature _____

Company Name _____ Telephone _____

Address _____
(Street) (City) (State) (Zip)

For Office Use: Accepted for the Exchange by: _____ Date _____

Iowa State University of Science and Technology Ames, Iowa 50010

University Extension

Address reply to:
Center for Industrial Research and Service
201 Building E
Telephone 515-294-3420

April 20, 1976

IOWA INDUSTRIAL WASTE INFORMATION EXCHANGE - LIST #1

Available and Wanted Waste Materials

Listed below are the materials which have been submitted to the Exchange through April 15, 1976, by Iowa firms. When inquiring about any of these materials please refer to the code numbers. Inquirers will not be given names of owners of these materials but owners will be made aware of, and will be urged to contact the firms who do inquire. Address all inquiries to Iowa Industrial Waste Information Exchange, c/o CIRAS, Bldg. E., Iowa State University, Ames, IA 50011.

Available Materials

Type & Code	Description	Amount	Form	Location
Oils:				
A-20.0	Used Motor Oil	250 Gal/Mo	Drums	E.C. Ia.
A-33.0	Cutting Oils (Mobilmet 308 & 26)	1200 Gal/Mo	Drums	S.W. Ia.
A-33.1	Water Soluble Cutting Oils	500 Gal/Mo	Drums	S.W. Ia.
A-34.0	Transformer Oil (contaminated)	Up to 7000 Gal	Drums	N.W. Ia.
Wood Products:				
A-10.0	Ponderosa K.D. Sawdust & Scrap	---	Rail Cars	E. Ia.
A-15.0	Wood Shavings & Sawdust Mixture	9 Cu Yd/Da	Loose	S.E. Ia.
A-15.1	Sawdust (Powdery)	3 Cu Yd/Da	Loose	S.E. Ia.
A-15.2	Wood Hog Residue	9 Cu Yd/Da	Loose	S.E. Ia.
A-17.0	Southern Yellow Pine Sawdust & Blocks	1 to 2 T/Wk	Loose	N.E. Ia.
A-29.2	Wood Pallets	100/Mo	---	N. Ia.
A-30.0	Wood Pallets	200/Wk	---	N.E. Ia.
A-31.0	Wood Blocks, Chips, Sawdust	1000 #/Wk	---	N.E. Ia.
Paper Products:				
A-25.1	Cardboard	6 Cu Yd/Wk	Bulk	S.E.
A-29.0	Cardboard	5000 #/Mo	Bales	N.
A-29.1	Paper	8000 #/Mo	Bales	N

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